

USGS-NPS VEGETATION MAPPING PROGRAM

Vegetation Classification of Assateague Island National Seashore

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VEGETATION SAMPLING & CLASSIFICATION

Introduction

This report presents the results of the vegetation classification portion of the NBS/NPS Vegetation Mapping Program at Assateague Island National Seashore. The methods for sampling the vegetation are briefly discussed, particularly in relation to the standard described in NBS/NPS Vegetation Mapping Program: Field Methods for Vegetation Mapping. Also included in this document are the vegetation classification for Assateague Island, the field key to the vegetation types, and descriptions of each vegetation type. Supplements to this report include the field data sheets for the classification plots and corresponding electronic data files (in dBase 5.0).

Methods

During a two day reconnaissance visit, an initial list of community types was developed by visually inspecting the National Seashore and visiting examples of all obvious vegetation polygon types.

The methods used for developing the vegetation classification for Assateague Island National Seashore followed the standards described in Field Methods for Vegetation Mapping. Due to the size of Assateague Island, the sampling approach was based on sampling across key environmental gradients and photographic signatures. The sample area consisted of the entire area of Assateague Island with no sites being inaccessible to sampling. Polygons were selected for sampling based on environmental factors (primarily beach, foredunes, interdunes, back dunes and salt marsh). Due to the low relief across the island, aspect, slope and soil type were not used for stratifying the samples. In addition, samples were selected to be geographically dispersed to capture the representative variability of each of the vegetation types. Accessibility was a minor factor in the selection of polygons for sampling (most polygons were not difficult to access).

Sample plots were subjectively located within polygons so as to include representative expressions of the community. The heterogeneity of the vegetation and the number of samples per type precluded randomly selecting plot location. The number of sample plots per vegetation type varied with the total coverage, number of polygons, and variability of each type. A total of 114 plots were taken across Assateague Island National Seashore, which averages to approximately 5 plots per vegetation type.

The size of sample plots varied with vegetation type. For forest, woodland and shrubland communities, 15 x 15 m and 20 x 20 m plots were used. The herbaceous vegetation was sampled with a 5 x 5 m sampling frame. In addition to the species information collected within the classification plots, additional species that were encountered in the vegetation polygon were noted on the field form.

Accuracy assessment will be completed following the completion of the final vegetation map. It is anticipated that additional field data will be collected to test and assess the accuracy of the map.

Results

Twenty-five vegetation types were delineated for Assateague Island National Seashore, including: 4 forest types, 1 woodland type, 8 shrubland types, 11 herbaceous types and 1 sparsely vegetated type.

Wild ponies that live on Assateague Island have created and maintain many disturbance vegetation types. Staff at the Monument have created several exclusion areas that demonstrate what the structure and composition of vegetation would be in the absence of grazing.

Following is the vegetation classification for Assateague Island National Seashore (set within the hierarchy of the National Vegetation Classification System). A vegetation key to facilitate identification of the types in the field and a description of each vegetation type at the National Seashore are provided in later sections of this report.

Classification

I. Forest

I.A. Evergreen forest

I.A.9. Temperate and subpolar needle-leaved evergreen forest

I.A.9.e. Needle-leaved evergreen seasonally flooded / saturated forest with rounded crowns

I.A.9.e.i. *Pinus taeda* (wetland) Forest Alliance

***Pinus taeda* / *Myrica cerifera* / *Osmunda regalis* Forest**

I.B. Deciduous forest

I.B.2. Cold-deciduous forest

I.B.2.a.ix. *Prunus serotina* - *Amelanchier canadensis* - *Quercus* spp. Forest Alliance

***Prunus serotina* / *Myrica cerifera* / *Smilax rotundifolia* Forest**

I.B.2.f.iii. *Acer rubrum* - *Nyssa sylvatica* Wetland Forest Alliance

***Acer rubrum* - *Nyssa sylvatica* - *Magnolia virginiana* Forest**

I.C. Mixed evergreen - deciduous forest

I.C.3. Mixed needle-leaved evergreen - cold-deciduous forest

I.C.3.a. Mixed needle-leaved evergreen - cold-deciduous (upland) forest

I.C.3.a.iv. *Pinus taeda* - *Quercus (nigra, falcata)* Forest Alliance

***Pinus taeda* / *Myrica cerifera* / *Vitis rotundifolia*
Forest**

II. Woodland

II.A. Evergreen woodland

II.A.2. Needle-leaved evergreen woodland

II.A.2.a. Needle-leaved evergreen woodland with rounded crowns

II.A.2.a.iv. *Pinus taeda* Woodland Alliance

***Pinus taeda* / *Hudsonia tomentosa* Woodland**

IV. Shrubland

IV.B. Deciduous shrubland

IV.B.2. Cold-deciduous shrubland

IV.B.2.a. Temperate deciduous shrubland

IV.B.2.a.i. *Myrica pensylvanica* - (*Prunus maritima*) Shrubland Alliance

***Myrica pensylvanica* / *Diodia teres* Shrubland**

IV.B.2.a.ii. *Myrica cerifera* (Wet) Shrubland Alliance

***Myrica cerifera* / *Hydrocotyle* spp. Shrubland**

Smilax spp. - *Toxicodendron radicans* Shrubland Alliance

***Smilax glauca* - *Toxicodendron radicans*
Shrubland**

IV.B.2.c. Deciduous seasonally / temporarily flooded shrubland

IV.B.2.c.i. *Myrica (cerifera, pensylvanica)* - *Vaccinium corymbosum* (wet) Shrubland Alliance

***Myrica (cerifera, pensylvanica)* - *Vaccinium corymbosum* Shrubland**

IV.B.2.c.ii. *Myrica cerifera* - *Baccharis halimifolia* Shrubland Alliance

***Myrica cerifera* - *Baccharis halimifolia* / *Spartina patens* Shrubland**

IV.B.2.g. Saltwater-tidal irregularly flooded shrubland

IV.B.2.g.i. *Baccharis halimifolia* - *Iva frutescens* Shrubland Alliance

***Baccharis halimifolia* - *Iva frutescens* / *Spartina patens* Shrubland**

V. Sparse Shrubland

V.B. Deciduous sparse shrubland

V.B.2. Cold-deciduous sparse shrubland with a dominant herbaceous stratum

V.B.2.b. Deciduous sparse shrubland with medium-tall grasses

V.B.2.b.i. *Myrica pensylvanica* - *Schizachyrium scoparium* Sparse Shrubland

***Myrica pensylvanica* / *Schizachyrium scoparium* ssp. *littorale* - *Eupatorium hyssopifolium* Sparse Shrubland**

VI. Dwarf shrubland

VI.A. Evergreen dwarf shrubland

VI.A.1. Needle-leaved and microphyllous evergreen dwarf shrubland

VI.A.1.b. Needle-leaved and microphyllous evergreen creeping or matted dwarf shrubland

VI.A.1.b.i. *Hudsonia tomentosa* Dwarf Shrubland Alliance

***Hudsonia tomentosa* / *Panicum (amarum, amarulum)* Dwarf-shrubland**

VIII. Herbaceous vegetation

VIII.A. Tall grassland

VIII.A.2. Temperate tall grassland

VIII.A.2.a.ii. *Juncus roemerianus* Herbaceous Alliance

***Juncus roemerianus* Herbaceous Vegetation**

VIII.A.2.g. Brackish tidal regularly/irregularly flooded tall grassland

VIII.A.2.g.i. *Typha angustifolia* - *Hibiscus* spp. Herbaceous Alliance

***Typha angustifolia* - *Hibiscus moscheutos*
Herbaceous Vegetation**

VIII.A.2.g.iii. *Phragmites australis* Herbaceous Alliance

***Phragmites australis* Herbaceous Vegetation**

VIII.A.2.i. Saltwater tidal regularly/irregularly flooded tall grassland

VIII.A.2.i.i. *Spartina alterniflora* Herbaceous Alliance

***Spartina alterniflora* / *Ascophyllum nodosum*
Herbaceous Vegetation**

VIII.B. Medium tall grassland

VIII.B.2. Temperate and subpolar medium tall grassland

VIII.B.2.b. Open medium tall grassland

VIII.B.2.b.i. *Ammophila breviligulata* Herbaceous Alliance

***Ammophila breviligulata* - *Panicum (amarum, amarulum)* Herbaceous Vegetation**

VIII.B.2.d. Seasonally / temporarily flooded medium tall grassland

VIII.B.2.d.v. *Juncus dichotomus* Herbaceous Alliance
***Juncus dichotomus* - *Drosera intermedia*
Herbaceous Vegetation**

VIII.B.2.d.vi. *Panicum virgatum* (seasonally flooded) Herbaceous Alliance

***Panicum virgatum* - *Spartina patens* Herbaceous Vegetation**

VIII.B.2.d.vii. *Scirpus pungens* (seasonally flooded) Herbaceous Alliance

***Scirpus pungens* - *Fimbristylis castanea*
Herbaceous Vegetation**

VIII.C. Short grassland

VIII.C.2. Temperate and subpolar short grassland

VIII.C.2.b. Open short grassland

VIII.C.2.b.i. *Spartina patens* - *Scirpus pungens* Herbaceous Alliance

***Spartina patens* - *Scirpus pungens* - *Solidago sempervirens* (Upland) Herbaceous Vegetation**

VIII.C.2.e. Saltwater tidal regularly/irregularly flooded short grassland

VIII.C.2.e.i. *Spartina patens* (Estuarine) Herbaceous Alliance

***Spartina patens* - *Distichlis spicata* - *Borrchia frutescens* Herbaceous Vegetation**

VIII.E. Low forb vegetation

VIII.E.1. Perennial low forb vegetation

VIII.E.1.b. Saltwater tidal semipermanently flooded low perennial forb vegetation

VIII.E.1.b.i. *Salicornia* - *Spartina alterniflora* Herbaceous Alliance

***Salicornia* spp. - *Sarcocornia perennis* - *Spartina alternifolia* Herbaceous Vegetation**

IX. Sparsely vegetated

IX.D. Sparsely vegetated sand accumulations

IX.D.1. Sparsely vegetated sand dunes

IX.D.1.e. Storm tide irregularly flooded upper beaches

IX.D.1.e.i. *Cakile edentula* Sparsely Vegetated Alliance

***Cakile edentula* ssp. *edentula* - *Salsola caroliniana* Sparse Vegetation**

Discussion

Overall, the sampling of vegetation and development of a classification for Assateague Island were successful. There were a number of minor difficulties (to be expected in a pilot project), and the lessons learned should prove valuable for future mapping projects. Following are some specific recommendations that should improve future vegetation mapping projects:

- 1) Make sure that there is enough time to complete the up-front ground work, so that everyone has a good idea of the vegetation types and the environmental gradients. This is essential to determine where the sampling should occur across the Park unit.
- 2) Analysis of the time requirements for this project should be better incorporated to develop realistic deadlines for the vegetation sampling, vegetation classification and the development of the descriptive products.
- 3) Vegetation sampling should ideally be conducted by two person teams, an ecologist/botanist and an assistant. Having a second person to help haul equipment, lay out plots, record data, and take GPS readings may more than double the efficiency of the operation.
- 4) Make sure that there is a well thought-out and documented plan for what the Park will be able to provide in terms of on-site logistics, and for the training, use and post-processing associated with GPS applications.

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